



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/943,783	08/31/2001	James K. Guy	7784-000263	1040
27572	7590	09/09/2004	EXAMINER	
HARNES, DICKEY & PIERCE, P.L.C. P.O. BOX 828 BLOOMFIELD HILLS, MI 48303			ROY, SIKHA	
			ART UNIT	PAPER NUMBER
			2879	

DATE MAILED: 09/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/943,783

Applicant(s)

GUY ET AL.

Examiner

Sikha Roy

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The Amendment, filed on June 14, 2004 has been entered and is acknowledged by the Examiner.

The revised drawings have been entered and are approved by the examiner.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,406,462 to Fallahi et al. in view of U.S. Patent 5,343,367 to Davenport et al.

Regarding claim 1 Fallahi discloses (Figs. 2,4 and 9 column 3 lines 39-50, column 8 lines 51-67) a light emitting apparatus comprising two solid bodies 120a,120b with external walls defined by first and second semi-ellipsoids 130a and 130b each defining a source focal point (first focal point) F_1 within and a target focal point (second focal point) F_2 adjacent opposite end, having the first focal points of the ellipsoid portions coinciding, a light source 124 positioned at the source focal point of the ellipsoidal portions. Fallahi further discloses the light rays 22 emitting from the light source 24 at the first focal point 36 strike the ellipsoidal portion 32, are reflected from

Art Unit: 2879

ellipsoidal surface and then are directed to the second (target) focus F_2 . The light rays inherently undergo total internal reflection from the ellipsoidal surface and then are directed towards the target focus.

Fallahi discloses the claimed invention except the light emitting apparatus comprising one solid body with overlapping first and second ellipsoids.

Davenport in analogous art of headlamp system with discharge arc light discloses (Fig. 1 column 2 lines 24-60) a headlamp system having pair of solid optical couplers 18, input ends of which together define a cavity for receiving the arc discharge light source 16. The light collected by the solid optical coupler 18 travels through the coupler by total internal reflection and is transmitted to the output end. Davenport discloses this configuration provides a compact light apparatus with direct optical coupling of the light source with less costly and less complex arrangement and finds suitable application for vehicular lamps.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to modify the two solid overlapping semi ellipsoid portions of Fallahi into one solid body as disclosed by Davenport for making the apparatus compact with less costly and complex arrangement used in vehicular lamps.

Furthermore it would have been obvious to one having ordinary skill in the art at the time of invention to make one solid body with overlapping ellipsoids from two solid ellipsoids of Fallahi since it has been held that constructing an integral structure from two separate parts involves only routine skill in the art as is evidenced by U.S. Patent 5,199,091 to Davenport.

Regarding claims 2 and 3 Fallahi discloses the light source includes a filament which intrinsically extends between two electrodes.

Regarding claim 5 Fallahi discloses (Figs. 10 and 11) the apparatus having a central cavity at the coinciding source focal points of the ellipsoid portions.

Regarding claim 6 Fallahi discloses the light bulb with all the limitations similar to that of claim 1 and additionally having opposite ends defined by conical end portions extending from the semi-ellipsoid portions. These end portions then concentrate light received from semi ellipsoidal portions onto the end of light guide 28 (Fig.1).

Claims 7, 8 and 10 essentially recite the same limitations as of claims 2,3 and 5 respectively and hence are rejected for the same reasons.

Claim 11 essentially recites the same limitations as of claim 1 and hence is rejected for the same reason.

Regarding claim 12 Fallahi discloses (column 7 lines 10-17, Fig. 8) the configuration of the bulb (emitter) is determined by the semi-minor axis (radius) H of the semi-ellipsoid.

Claims 13,14 essentially recite the same limitations as of claims 2,3 respectively and hence are rejected for the same reasons.

Regarding claim 16 Fallahi discloses (Figs. 1, 4, 5) a light emitting apparatus 20 having external wall defined by an ellipsoidal member 32 with focal axis 31 and source focal point (first focal point) F_1 within the body and target focal point F_2 adjacent opposite end and a light source 24 disposed within the body at source focal point, the

ellipsoidal portion causing light emitted from the source 24 focus at the target focal point which may have fiber optic light guide.

Claim 16 differs from Fallahi in that Fallahi does not exemplify the first and second overlapping ellipsoidal members.

Fallahi discloses (column 9 lines 5-10) that an embodiment with two light collecting portions provide the advantage of multiple output from a single input and can be used to transmit light to multiple remote locations. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to modify light emitting apparatus of Fallahi with single ellipsoidal portion to two overlapping solid ellipsoidal portions having the light source at the common source focal point for providing light output in two directions.

Regarding claim 4 Fallahi discloses (column 8 lines 54-57) the solid body made from transparent, acrylic or polycarbonate material. Fallahi does not exemplify the solid body comprising glass.

Davenport discloses (column 3 lines 40-59) the body made of glass, a material having high transmittance value in visible light range.

It would have been obvious to use glass for the solid body as disclosed by Davenport instead of acrylic or polycarbonate material of Fallahi for providing the light emitting apparatus with high transmittance in the visible range.

Claims 9 and 15 essentially recite the same limitation as of claim 4 and hence are rejected for the same reason.

Response to Arguments

Applicant's arguments filed June 14, 2004 have been fully considered but they are not persuasive.

In response to applicant's argument that Fallahi does not disclose 'the walls of the solid body cause total internal reflection of light emitted from the source focal point to the target focal point' the examiner respectfully disagrees. Fallahi discloses (Fig.4) light rays 22 emitting from the light source 24 at the first focal point (F_1) 36 strike the ellipsoidal portion 32, are reflected from ellipsoidal surface and then are directed to the second (target) focus F_2 . The light rays inherently undergo total internal reflection from the ellipsoidal surface of the solid body and then are directed towards the target focus. Additionally Fallahi provides the detailed calculation of the configuration of the reflective surface 30 yielding total reflection of the light rays emitted from one focal point and directed towards the second focal point.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

Art Unit: 2879

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikha Roy whose telephone number is (571) 272-2463. The examiner can normally be reached on Monday-Friday 8:00 a.m. – 4:30 p.m.

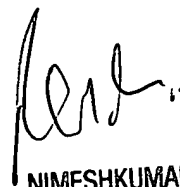
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (571) 272-2457. The fax phone number for the organization is (703) 308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S.R.

Sikha Roy
Patent Examiner
Art Unit 2879



NIMESHKUMAR D. PATEL
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800